

Q 1

In stationary waves

A

Strain is maximum at antinodes

B

Strain is minimum at nodes

C

Strain is maximum at node

D

Amplitude is same at all points

Q 2

Which is not radioactive?

A

ozone

B

hydrogen

C

sodium

D

all of these

Q 3

The radiation hazards are due to

A

radioactive elements

B

non radioactive elements

C

any of a or b

D

there are no radiation hazards

Q 4

Coherent sources are...

A

monochromatic sources

B

sources which produce waves of equal amplitude

C

monochromatic sources which produce waves of constant phase difference

D

sources which produce wave of same frequency



Q 5

The SI unit of angular displacement is

A

Metre

B

Kilometre

C

Radian

D

None of these

Q 6

The value of acceleration due to gravity on moon is \_\_\_\_\_ of earth

A

$\frac{1}{4}$  th

B

$\frac{1}{10}$ th

C

$\frac{2}{3}$ rd

D

$\frac{1}{6}$ th

Q 7

If peak Voltage across a full wave rectifier is 20V then  $V_{rms}$  is

A

7.07

B

14.14 v

C

16.8V

D

12V

Q 8

In series circuit, current remains?

A

Same

B

Different

C

Sometimes same sometimes different

D

None of them

Q 9

In Thermodynamics first law is related with

A

Pressure conservation

B

Entropy conservation

C

Temperature conservation

D

Energy Conservation

Q 10

Which group consists of only electromagnetic waves:

A

microwaves, radio waves, infra red

B

microwaves, radio waves, sound

C

microwaves, water waves, infra red

D

n/a

Q 11

Work is a

A

vector quantity

B

scalar quantity

C

sometime scalar some time vector

D

none of these

Q 12

Two  $\alpha$ -particles have the ratio of their velocities as 3 : 2 on entering the field. If they move in different circular paths, then the ratio of the radii of their paths is

A

2 : 3

B

3 : 2

C

4 : 9

D

9 : 4



Q 13

A circuit that adds positive or negative dc voltage to an input sine wave is called

A

Clamper

B

clipper

C

diode clamp

D

limiter

Q 14

The radioactive isotope of Carbon is

A

$^{12}\text{C}$

B

$^{14}\text{C}$

C

$^{10}\text{C}$

D

none of these

Q 15

One radian means

A

arc length of unit radius is half

B

arc length of unit radius is unity

C

one degree

D

all of these

Q 16

Galvanometer is an

A

Electromechanical device

B

Electrosolar device

C

Electrothermal device

D

None of them

Q 17

For a reversible process, necessary condition is

A

Heat energy should be zero

B

Process must be fast

C

Process must be quasistatic

D

Process must not be in equilibrium

Q 18

Primary and secondary powers of a transformer are 200W and 100 W respectively, the efficiency of a transformer is

A

50%

B

1

C

20%

D

10%

Q 19

The condition for the validity under Ohm's law is that

A

Resistance must be uniform

B

Current should be proportional to the size of the resistance

C

Resistance must be wire wound type

D

Temperature at positive end should be more than the temperature at negative end

Q 20

If the increase in the kinetic energy of a body is 22% , then the increase in the momentum will be:

A

0.22

B

0.44

C

0.1

D

1



Q 21

Peak voltage in the output of full wave rectifier is 10V so dc component of output voltage is

A

$10\sqrt{2}$

B

$20/\sqrt{2}$

C

$20/\pi$

D

$20\pi$

Q 22

Acceleration of a particle at any moment from a-t graph we calculate is called \_\_\_\_\_ acceleration

A

average

B

instantaneous

C

periodic

D

linear

Q 23

Whenever a transverse wave, travelling in a rarer medium, encounters a denser medium. It...

A

bounces back such that the direction of its displacement remains same

B

bounces back such that the direction of its displacement is reversed

C

Travels into second medium and the direction of its displacement is reversed

D

Travels into second medium and the direction of its displacement remains same

Q 24

An object is undergoing simple harmonic motion. Its time period is  $T$  and total energy is  $E$ . The amplitude of vibration is reduced to half. What is the new time period and total energy of the system?

A

time period =  $T/2$  total energy =  $E/4$

B

time period =  $T$  total energy =  $E/4$

C

time period =  $T/2$  total energy =  $E/2$

D

time period =  $T$  total energy =  $E/2$

Q 25

Planck's constant is analogous to :

A

Inertia

B

Wave nature

C

Angular momentum

D

Linear momentum

Q 26

If  $dU$  and  $dW$  represent internal energy and work done then which is true?

A

$dU = -dW$  in a adiabatic process

B

$dU = dW$  in Isothermal process

C

$dU = dW$  in adiabatic process

D

$dU = -dW$  in isothermal process

Q 27

In case of harmonic oscillator total energy remains

A

variable

B

infinity

C

constant

D

zero



Q 28

Michelson determined velocity of light by

A

studying rotation of moon and sun

B

using interferometer

C

using a rotating plane mirror

D

using an octagonal rotating mirror



Q 29

Force experienced by charge particles in magnetic field is

A

perpendicular to velocity

B

perpendicular to field

C

parallel to field

D

perpendicular to velocity and field

Q 30

An ideal step down transformer is connected to main supply of 240V. it is desired to operate 12V,30W lamp. What is the current in primary coil?

A

0.125A

B

0.5A

C

125A

D

12.5A

Q 31

The fusion reaction is almost \_\_\_\_ times more stronger than fission reaction

A

two times

B

ten times

C

hundred times

D

thousand times

Q 32

The force between two charges  $Q$  and  $q$ , separated by a distance  $d$  is  $F$ . What will be the force between them when distance between them is  $d/2$ ?

A

$4F$

B

$2F$

C

$F$

D

$F \times 2$

Q 33

Transformer is used in rectification to \_\_\_\_\_ the supply voltage

A

step up

B

step down

C

equalize

D

none of them

Q 34

The angular acceleration becomes infinite when  $r$  becomes

A

zero

B

doubled

C

very large

D

none of these

Q 35

Energy stored in a parallel plate capacitor:...

A

CV

B

$CV^2$

C

$\frac{1}{2} CV$

D

$\frac{1}{2} CV^2$

Q 36

In step down transformer \_\_\_\_\_ is decreased in secondary coils

A

electric field

B

magnetic field

C

number of turns

D

none of these



Q 37

Which of the following waves cannot be polarized.

A

radio waves

B

ultrasound

C

ultraviolet

D

x-rays

Q 38

The speed of photons in vacuum is \_\_\_\_ than in liquid water

A

higher

B

smaller

C

equal

D

none of these

Q 39

Find the maximum force of the conductor having length 60cm, current 2.75A and flux density of 9 units.

A

14.85

B

18.45

C

84.25

D

7.325

Q 40

If a squash ball comes back to its starting point after bouncing off the wall several times, then:....

A

its total displacement is zero but its average velocity is non-zero

B

its total displacement is non-zero but its average velocity is zero

C

both its total displacement and its average velocity is non-zero

D

its total displacement is zero and so also is its average velocity

Q 41

The final image produced by electron microscope can be seen

A

on electron micrograph

B

scanning micrometer

C

on fluorescent screen

D

none of these

Q 42

An ideal gas at 15.5C and a pressure of  $1.72 \times 10^5$  Pa occupies a volume of  $2.81 \text{ m}^3$ . If the volume is raised to  $4.16 \text{ m}^3$  and the temperature raised to 28.2C, what will be the pressure of the gas?

A

$121 \times 10^5$  Pa

B

$1.21 \times 10^5$  Pa

C

1.21 Pa

D

121 Pa

Q 43

The angular speed of a particle, moving in a circle of radius 20 cm, increases from 2 rad/s to 40 rad/s in 9s the ratio of its centripetal acceleration to tangential acceleration at the end of 19 s is,

A

400:1

B

14:20

C

800:1

D

7:40

Q 44

A beam of ion with velocity  $2 \times 10^5$  m/s enters normally into a magnetic field of 0.04 T. The specific charge of ion is  $5 \times 10^7$  C/kg. Radius of circle is

A

0.1 m

B

0.16 m

C

0.2 m

D

0.25 m



Q 45

If two particles collide with one anti particle the resultant will give

A

one particle, one anti particle

B

total annihilation

C

one antiparticle only

D

none of these

Q 46

x-rays cannot detect

A

sugar

B

blood pressure

C

cholesterol

D

all of these

Q 47

Voltage in secondary winding is \_\_\_\_\_ to current in secondary coil

A

directly proportional

B

inversely proportional

C

directly squared proportional

D

not enough information

Q 48

Let L be the light source. Its intensity at the distance of  $3x$  from L is  $I$ . What is its intensity of light at the distance of  $2x$  from the source of light?

A

$$9I/4$$

B

$$3I/2$$

C

$$4I/9$$

D

$$2I/3$$

Q 49

Half wave voltage multiplier can provide any degree of voltage multiplication by cascading diodes and capacitors.

A

any doubler

B

any tripler

C

any multiplication

D

none of them

Q 50

Efficiency of heat engine in Terms of Temperature of reservoir and sink is defined as

A

$$T_1/T_2$$

B

$$1+T_1/T_2$$

C

$$1-T_1/T_2$$

D

$$T_2/T_1$$

Q 51

A capacitor can store its energy in its:....

A

magnetic field

B

parallel plate

C

electric field

D

coil

Q 52

Value of current in a short circuit is \_\_\_\_\_

A

Infinite

B

zero

C

minimum

D

maximum



Q 53

Projectile motion is not dependent on the \_\_\_\_\_ of particle

A

initial velocity

B

mass

C

launch angle

D

acceleration

Q 54

Whenever new nuclei are formed energy is

A

absorbed

B

released

C

remain unchanged

D

none of these

Q 55

Scattering is a process involving \_\_\_\_\_

A

reflection

B

refraction

C

diffraction

D

none of these

Q 56

The two points of a medium are separated through a distance of 10 cm. What is the phase angle between these two points if the wavelength of the wave is 0.1m.

A

$\pi$

B

$2\pi$

C

$3\pi$

D

$3\pi/4$

Q 57

In IUPAC nomenclature, aldehydes are named as\_\_\_\_\_?

A

Alkanol

B

Alkanal

C

Alkanone

D

Alkaldehyde

Q 58

an element or its compound is first \_\_\_\_\_ to get its \_\_\_\_\_ spectrum by spectrometer

A

freezed,continuous

B

freezed,line

C

volatilized, line

D

volatilized,continuous

Q 59

A state function depends upon the\_\_\_\_\_?

A

Initial condition of the system

B

Final condition of the system

C

Path of the system

D

Both initial and final condition of the system

Q 60

The reaction in which one of the group of a compound is replaced by another group of atoms is called as \_\_\_\_\_?

A

Substitution

B

Elimination

C

Addition

D

Condensation



Q 61

A mole of a substance contains \_\_\_\_\_ particles

A

$6.2 \times 10^{22}$

B

$6.22 \times 10^{22}$

C

$6.02 \times 10^{23}$

D

$6.5 \times 10^{22}$

Q 62

Only those substances are written in Ion Electron Method

A

which are oxidizing

B

which are reducing

C

which are not taking part in reaction

D

Which will take part in reaction

Q 63

The temperature at which enzyme activity is maximum is called as \_\_\_\_\_?

A

Maximum temperature

B

Absolute temperature

C

Critical temperature

D

Optimum temperature

Q 64

In tertiary alkyl halides, carbon atom is attached to how many carbon atoms?

A

2

B

3

C

4

D

1

Q 65

What is the coordination number of Cu metal in  $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4$ ?

A

3

B

4

C

6

D

1

Q 66

H-bonding is stronger than \_\_\_\_\_?

A

Dipole dipole forces

B

Debye forces

C

London forces

D

All of these

Q 67

Amorphous solids turns into glass like state from rubber like state, this is called

A

transition

B

crack transition

C

glass transition

D

all of these

Q 68

What is the hybridization of carbon in -COOH group?

A

$sp^2$

B

$Sp^3$

C

$Sp$

D

None of these



Q 69

Isopentane is an example of\_\_\_\_\_?

A

Aromatic compounds

B

Branched chain compound

C

Alicyclic compounds

D

None of these

Q 70

Addition of second Electron to a uni-negative ion always\_\_\_\_\_?

A

An endothermic process

B

An exothermic process

C

Neutral process

D

Energy wasted

Q 71

Optimum temperature range for the process of fermentation is

A

2 - 3 'C

B

25 - 35 'C

C

27 - 33 'C

D

4 - 45 'C

Q 72

Cholesteryl Benzoate turns milky at

A

123°C

B

135°C

C

145°C

D

179°C

Q 73

What will be the product at cathode during the electrolysis of brine in Nelson's cell?

A

H<sub>2</sub>

B

Na

C

CO<sub>2</sub>

D

O<sub>2</sub>

Q 74

Which of the following is used in silvering of mirror in industries \_\_\_\_\_?

A

Acetone

B

Propanol

C

Ethanal

D

Butanone

Q 75

$\text{NaBH}_4$  causes reduction of aldehyde and ketones into \_\_\_\_\_?

A

Alcohols

B

Alkenes

C

Phenols

D

Alkanes

Q 76

The bond formed by the complete transfer of electron is called

A

ionic bond

B

covalent bond

C

metallic bond

D

polar covalent bond



Q 77

Sodium is not observed in +2 oxidation state because of its

A

high first ionization potential

B

high second ionization potential

C

high ionic radius

D

high electronegativity

Q 78

Which of the following is a non-typical transition element?

A

Mn

B

Zn

C

Cu

D

Ag

Q 79

Alkyl iodides can not be prepared directly by the halogenation of alkanes because ?

A

Iodine reacts slowly

B

Iodine reacts reversibly

C

HI formed reduces alkyl iodide again to starting material

D

All of these

Q 80

Electrons in a Voltaic Cell flow from

A

Cathode to Anode

B

Anode to Cathode

C

Right to left

D

None of these

Q 81

At 0°C what is the physical state of water?

A

Ice

B

liquid

C

Vapour

D

Both ice and liquid

Q 82

The nature of Binding Force in Ionic Crystals is

A

Magnetic

B

Repulsive

C

Electrostatic

D

Weak

Q 83

Anything under test or observation in laboratory is called

A

Surrounding

B

System

C

Confined space

D

None of these

Q 84

Which of the following is not a derivative of carboxylic acid?

A

Alkyl Halide

B

Acetamide

C

Ester

D

Anhydride



Q 85

By Increasing temperature in Ammonia synthesis the value of  $K_c$

A

decreases

B

increases

C

remain constant

D

None of these

Q 85

By Increasing temperature in Ammonia synthesis the value of  $K_c$

A

decreases

B

increases

C

remain constant

D

None of these

Q 86

Dipole dipole forces are stronger between the molecule when?

A

Electronegativity difference is higher

B

Electronegativity difference is less

C

Molecules are far from each other

D

Electronegativity difference is zero

Q 87

As far as nuclear charge increases, the decrease in ionic radii will also

A

larger

B

smaller

C

remains same

D

moderate

Q 88

Which of the following is best method to prepare alkyl halides from alcohols?

A

Reaction of alcohol with HX

B

Reaction of alcohol with  $\text{SOCl}_2$

C

Reaction of Alcohol with  $\text{PCl}_3$

D

Reaction of Alcohol with  $\text{PCl}_5$

Q 89

Which is not a heterocyclic compound?

A

Furan

B

Pyrrole

C

Pyridine

D

Ethane

Q 90

The isomerism in which compounds have different number of carbon atoms on both sides of the functional group is called as?

A

Tautomerism

B

Metamerism

C

Geometrical Isomerism

D

Position isomerism

Q 91

If temperature of reaction medium increases above optimum temperature then\_\_\_\_\_?

A

It increases the enzyme activity

B

Stops the reaction

C

Decreases the enzyme activity

D

Both b and c



Q 92

Which of the following compound is formed when  $\text{NaCl}$  reacts with  $\text{CH}_3\text{MgBr}$

A

$\text{CH}_3\text{CN}$

B

$\text{CH}_3\text{Cl}$

C

$\text{CH}_3\text{CH}_2\text{NH}_2$

D

None of these

Q 93

Acetaldehyde oxidation will lead to formation of

A

Acetic acid

B

Butanoic acid

C

Propanoic acid

D

Ester

Q 94

The shapes of subshells is \_if value of azimuthal quantum number 'l' is 2

A

spherical

B

dumbbell

C

complicated

D

all of these

Q 95

Which of the following oxidizing agents can oxidize benzene?

A

$\text{KMnO}_4$

B

$\text{K}_2\text{Cr}_2\text{O}_7$

C

$\text{KHMnO}_4$

D

$\text{V}_2\text{O}_5$

Q 96

Who introduce the concept of macromolecules?

A

Runge

B

MaxWell

C

Staudinger

D

None of these

Q 97

How many isomers of a disubstituted benzene are possible?

A

Two

B

Three

C

Four

D

One

Q 98

A structural formula shows\_\_\_\_\_?

A

Arrangement of atoms in the compound

B

Arrangement of electrons in the compound

C

Arrangement of Orbitals that involved in bonding

D

Lewis structure of compounds

Q 99

In industries, methanol is prepared from?

A

Marsh gas

B

Carbon dioxide and water

C

Water gas

D

Methane +  $H_2$



Q 100

In which of the following reaction steps free radical is formed?

A

Initiation, termination

B

Termination, propagation

C

Only initiation

D

Initiation, propagation

Q 101

Which one of the following shows that iodoform test for a compound is positive?

A

Formation of carboxylate salt

B

Brick red precipitate formation

C

Yellow crystals

D

Formation of water

Q 102

\_\_\_\_\_ enzyme catalyses the conversion of hexoses to 6- phosphate derivatives.

A

Hexokinase

B

Glucokinase

C

Fructokinase

D

Malonic acid

Q 103

Which of the following reactions have first step similar with each other?

A

$E_1, S_2$

B

$E_2, S_1$

C

$E_2, S_2$

D

$E_1, S_1$

Q 104

Location of transition elements is in between?

A

s and p block

B

d and f block

C

s and f block

D

None

Q 105

A sample of 0.7 mol of metal M reacts completely with excess of fluorine to form 45 g of  $\text{MF}_2$ , how many moles of F are present in it.

A

1.4 moles

B

2.4 moles

C

2 moles

D

1.2 moles

Q 106

line spectrum of sodium contains \_\_\_\_ colored lines separated by a definite distance

A

one yellow

B

two yellow

C

two brown

D

two golden

Q 107

Values of Van der Waals's constant 'b' in correct order is

A

$\text{CO}_2 < \text{SO}_2 < \text{O}_2 < \text{H}_2$

B

$\text{CO}_2 > \text{SO}_2 > \text{O}_2 > \text{H}_2$

C

$\text{O}_2 < \text{H}_2 < \text{CO}_2 < \text{SO}_2$

D

$\text{O}_2 > \text{H}_2 > \text{CO}_2 > \text{SO}_2$



Q 108

Which one of the product is obtained when acetic acid reacts with Ethyl alcohol in the presence of mineral acid ?

A

CO

B

$\text{CH}_3\text{COOCH}_3$

C

$\text{CH}_3\text{CH}_2\text{COOH}$

D

$\text{CH}_3\text{COOCH}_2\text{CH}_3$

Q 109

Which one of the following is not a heterocyclic compound

A

thiophene

B

anthracene

C

furan

D

pyrrole

Q 110

Number of Electrons added on both sides of oxidation and reduction half reactions are balanced

A

At the start of procedure

B

Somewhere in the middle of balancing

C

After Adding two Half reactions

D

Before Adding two Half Reactions

Q 111

The existence of an element in more than one crystalline forms called

A

isomerism

B

allotropy

C

anisotropy

D

all of these

Q 112

Which is an aromatic Aldehyde?

A

Propanone

B

Pentanol

C

Benzaldehyde

D

Hexanol

Q 113

Reflex action is controlled by:

A

Peripheral nervous system

B

Central nervous system

C

autonomic nervous system

D

Circulatory system

Q 114

The organisms able to use sunlight directly as a source of energy are?

A

Plants

B

Animals

C

Fungi

D

Omnivores

Q 115

The Prokaryotic Life is characterized by

A

absence of locomotion

B

absence of nuclear envelope

C

absence of Protein

D

absence of nuclear material



Q 116

In some cases the blastomere can produce complete embryo the cleavage will be?

A

Spiral and determinate

B

Spiral and indeterminate

C

Radial and determinate

D

Radial and indeterminate

Q 117

What is hydrolyzed during muscle contraction?

A

ACP

B

ADP

C

NAD

D

ATP

Q 118

Allosteric enzymes consist of multiple?

A

inhibitors

B

polypeptide chains

C

active sites

D

temperature ranges

Q 119

Population growth is checked by which of the following?

A

no competition

B

no polymorphism

C

polymorphism

D

competition

Q 120

Which of the following bacteria are thick rigid and spiral?

A

Coccus

B

Vibrio

C

spirillum

D

Bacillus

Q 121

In photosynthesis dark reaction, is called so because

A

It occurs in dark.

B

It does not require light energy.

C

It cannot occur during daytime.

D

It occurs more rapidly at night.

Q 122

Which of the following cytoskeletal fiber contain tubulin protein?

A

One which help in assembly of spindles during mitosis.

B

One involved in internal cell motion

C

One involved in maintenance of cell shape.

D

both a and c

Q 123

When red homozygous flower is paired with white homozygous flower then the resultant pink snapdragon is result of?

A

complete dominance

B

codominance

C

partial dominance

D

all of these



Q 124

What is the main cause of lung cancer?

A

Smoking

B

Cough

C

Pollutants

D

Mutagens

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Q 125

The function of vocal cords is to help in:

A

voice production

B

energy production

C

glucose production

D

air production

Q 126

In what year was the first person vaccinated by Edward Jenner?

A

1876

B

1796

C

1696

D

1850

Q 127

The genetic change in a population caused by natural selection is called?

A

polymorphism

B

specialization

C

gene linkage

D

adaptation

Q 128

For the production of Lactose we combine

A

glucose, galactose and dehydrogenase them

B

glucose, fructose and dehydrogenase them

C

two amino acids must form a peptide bond

D

nitrogenous base with sugar molecule

Q 129

The spinal cord is part of:

A

brain

B

Central nervous system

C

peripheral nervous system

D

somatic division

Q 130

What is meant by optimum temperature of an enzyme?

A

The temperature at which the primary structure of an enzyme remains intact.

B

The temperature at which an enzyme makes the maximum amount of product.

C

The temperature at which an enzyme may be more affected by an inhibitor.

D

The temperature at which an enzyme makes the least amount of product.

Q 131

Where can viruses replicate?

A

Animals

B

Plants

C

Bacteria

D

All



Q 132

The process that has transformed life on earth from its earliest forms to vast diversity is?

A

mutation

B

evolution

C

migration

D

genetic drift

Q 133

Cytokinins delay the aging of fresh leaf crops such as cabbage and lettuce as well as keeping flowers?

A

attached

B

open

C

fresh

D

delayed

Q 134

Animals like starfish have small groups of neurons in each arm connected to a ring of neurons in the centre. This type of nervous system is called \_\_\_\_\_.

A

Centralized nervous system

B

Partially centralized nervous system

C

Diffuse nervous system

D

Partially diffuse nervous system

Q 135

The centers for thermoregulation and osmoregulation are present in:

A

thalamus

B

amygdala

C

hypothalamus

D

cerebellum

Q 136

An activated enzyme consisting of polypeptide chain and a cofactor is called?

A

Apoenzyme

B

Holoenzyme

C

Activated enzyme

D

both b and c

Q 137

The larvae of which of these animals resemble those of chordates?

A

Starfish

B

Cuttlefish

C

Catfish

D

Butterfly

Q 138

In the chest wall, the rib muscles are considered as

A

intercostal muscles

B

Pulmonary muscles

C

Both and A and B

D

Coastal muscles

Q 139

A smallest contractile unit of muscle contraction called sarcomere is the area between two?

A

H zone

B

M line

C

Z line

D

Z zone



Q 140

The fluid mosaic model of plasma membrane proposes that membranes are:

A

Solid

B

Semi-solid

C

Fluid

D

Liquid

Q 141

Muscles are composed of:

A

silica

B

polyester threads

C

groups of cell fibers

D

calcium and phosphorous

Q 142

The genetically Engineered vaccine is not available for which of the following?

A

HAV

B

HBV

C

HCV

D

HDV

Q 143

If two species have similar proteins and genes it means

A

they have same organs

B

they have common ancestors

C

they have similar appearance

D

all of above

Q 144

Which one of the following is not a double membranous structure?

A

vacuole

B

mitochondria

C

chloroplast

D

nucleus

Q 145

A detachable cofactor is known as:

A

Prosthetic group

B

Coenzyme

C

Holoenzyme

D

Activator

Q 146

cytochrome C is oxidised by which coenzyme in the ETC?

A

cytochrome a

B

coenzyme q

C

coenzyme b

D

coenzyme a

Q 147

In a certain species of feline, all males are much larger than females. Members of either sex that are of intermediate size struggle to find mates. What principle best describes this phenomenon?

A

Bottleneck affect

B

Directional selection

C

Genetic drift

D

Disruptive selection



Q 148

How many pairs of homologous chromosomes are present in *Pisum sativum*?

A

5

B

6

C

7

D

8

Q 149

A man with blood group "A" marries a woman of blood group "B". Both are heterozygous. What is the offsprings having phenotype "O"

A

10%

B

25%

C

50%

D

75%

Q 150

60S and 40S subunit combine to form what size particle?

A

80S

B

90S

C

100S

D

110S

Q 151

Metastasis is a process where:

A

One cell control activities of others

B

one cell transfers its activities to others

C

one cell destroys other cells

D

one cell transfers germs to another cell

Q 152

The rise in blood glucose concentration occurs due to which hormone?

A

glucagon

B

glucose

C

insulin

D

all of these

Q 153

The amount of oxygen in exhaled air is:

A

21%

B

16%

C

79%

D

4%

Q 154

What is the origin of the acoelomate gut?

A

Ectodermal

B

Mesodermal

C

Endodermal

D

none of these

Q 155

Example of bacteria requiring low concentration of oxygen is?

A

spirochete

B

e coli

C

pseudomonas

D

campylobacter



Q 156

Which of the following processes had resulted in the production of different breeds of domestic dogs and pigeons?

A

natural selection

B

cross breeding

C

artificial selection

D

self breeding

Q 157

The fundamental contractile unit of the myofibril:

A

Z-line

B

actin

C

Sarcomere

D

sarcolemma

Q 158

How many amino acids are constituents of proteins only?

A

25

B

20

C

21

D

22

Q 159

When the glucose level in blood comes down, glucose is synthesized from\_\_\_\_\_

A

fats

B

glycogen

C

amino acids

D

DNA

Q 160

Which of the following is an ovoviviparous organism?

A

reptiles

B

mammals

C

frog

D

Duckbill platypus

Q 161

Critical day length for cocklebur is which of the following?

A

8.5 hrs

B

10hrs

C

14 hrs

D

15.5 hrs

Q 162

What are the distinguishing features of fibrous proteins?

A

non-crystalline

B

elastic

C

disorganized

D

both a and b

Q 163

What does the active site of the enzyme determine?

A

Looks like a lump projection from the surface of an enzyme

B

Forms no chemical bond with substrate

C

never changes

D

Determines by its structure the specificity of an enzyme



Q 164

The female gametes are most commonly referred as?

A

egg

B

ova

C

ovum

D

all of these

Q 165

Saponification number describes \_\_\_\_

A

Unsaturation in fat

B

Average molecular weight of fatty acid

C

Acetyl number

D

Acid number

Q 166

Which of the following is not true of virions?

A

Reproduce independently

B

contain DNA

C

Contain RNA

D

Extracellular

Q 167

Secondary cell wall is absent in \_\_\_\_\_.

A

Xylem

B

Phloem

C

Meristems

D

All of them possess secondary cell walls.

Q 168

Flame cells are the excretory structures for which of the following?

A

Annelida

B

Coelenterates

C

Echinodermata

D

Platyhelminthes

Q 169

The right side of the body is controlled by:

A

left cerebral hemisphere

B

right cerebral hemisphere

C

Hippocampus

D

Corpus callosum

Q 170

Which of the following changes could lead to loss of enzymatic function?

A

Decrease in activation energy of the reaction

B

Increase in enzyme concentration

C

Change in overall enthalpy of the reaction

D

Increase in pH of the reaction

Q 171

Which of the following glands contribute to the production of semen?

A

Seminal vesicles

B

Bulbourethral glands

C

Prostate gland

D

all of these



Q 172

Which of the following best describes the impact of purifying selection?

A

It increases frequency of an allele

B

It is the same as disruptive selection

C

It increases genetic diversity

D

It removes variation from the population

Q 173

Van Niel hypothesis about the production of oxygen during photosynthesis was based on the study and investigations on?

A

Bacteria

B

Algae

C

Protonema

D

Cyanobacteria

Q 174

What happens in a contracted muscle fibre?

A

A band vanishes

B

M line vanishes

C

H zone elongates

D

I band is steady

Q 175

The process of self-digestion of selective non functional organelle by cells through the actions of enzymes originating from the cell is called?

A

pinocytosis

B

endocytosis

C

autophagy

D

cytotoxicity

Q 176

A sample of RNA is sequenced and found to contain 22% adenine. Which of the following conclusions can also be drawn about the sample?

A

22% uracil

B

22% cytosine

C

22% thymine

D

22% guanine

Q 177

The type of bronchitis that causes no permanent damage to the lungs and lasts for two weeks is known as

A

Acute bronchitis

B

Chronic bronchitis

C

coastal bronchitis

D

intercostal bronchitis

Q 178

Normal human blood is about:

A

15 ml/100 ml of blood

B

19.6 ml/100 ml of blood

C

20 ml/ 100 ml of blood

D

200 ml/100 ml of blood

Q 179

An inhibitor is added, disrupting the function of a particular enzyme. The experimenter adds more substrate, and enzyme function increases again. These results indicate the involvement of what type of inhibitor?

A

Noncompetitive

B

Uncompetitive

C

Allosteric

D

Competitive



Q 180

Which of these functions will be affected if the medulla oblongata is damaged?

A

Thermoregulation

B

Vision

C

Memory

D

Tactile sensation-response when pricked with a needle

Q 181

\_\_\_\_\_ butter is melting

A

A

B

An

C

The

D

no article

Q 182

According to the information on this page, items bought before 1940 \_\_\_\_\_ more than items made after that year.

A

costs

B

costed

C

costing

D

cost

Q 183

The Earth \_\_\_\_\_ (move) around the sun.

A

move

B

moving

C

moves

D

had moved

Q 184

The teacher \_\_\_\_\_ them an hour for their painting.

A

allowed

B

has allowed

C

is allowing

D

allows

Q 185

Is there anything \_\_\_\_\_ you'd like to ask me about?

A

else

B

more

C

extra

D

much

## Demonstrate control of tenses and sentence structure

Q 186

The rain \_\_\_\_\_ (continue) into the evening, ruining the picnic plans.

A

continues

B

will continue

C

continued

D

contnuing

## Comprehend key vocabulary

Q 187

As a teacher, my primary concern is the \_\_\_\_\_ of my students.

A

welfare

B

welcome

C

well off

D

well wisher



## Demonstrate control of tenses and sentence structure

Q 188

Identify the tense used in the given sentence. "Everyone shall be reaching by tomorrow."

A

Present

B

Past

C

Future

D

None

Demonstrate correct use of articles and prepositions Demonstrate correct use of subject-verb agreement Demonstrate correct use of writing conventions of spelling, capitalization and punctuation to clarify meaning

Q 189

Choose the correct sentence.

A

I like to cook I like to make cake, bread and pie.

B

I like to cook. I like to make cake, bread and pie!

C

I like to cook; I like to make cake, bread and pie.

D

I like to cook. I like to make cake, bread and pie.

Demonstrate correct use of articles and prepositions Demonstrate correct use of subject-verb agreement Demonstrate correct use of writing conventions of spelling, capitalization and punctuation to clarify meaning

Q 190

If you lend him a book (A)/ he will lend it (B), to someone else (C) and never you will get it back. (D)

A

If you lend him a book

B

he will lend it

C

to someone else

D

and never you will get it back.

Demonstrate correct use of articles and prepositions

Q 191

Do you have \_\_\_\_\_ calculator? I need it to solve this sum.

A

a

B

an

C

the

D

no article

Demonstrate correct use of subject-verb agreement

Q 192

A container of nuts and bolts \_\_\_\_\_ found in the cellar.

A

was

B

were

C

would be

D

is

## Comprehend key vocabulary

Q 193

juxtaposition

A

contrast

B

wit

C

image

D

freedom

Demonstrate correct use of articles and prepositions

Q 194

They had been waiting at the departure lounge for almost three hours when they finally got ---- the train.

A

on

B

in

C

up

D

to



Demonstrate control of tenses and sentence structure

Q 195

I have decided \_\_\_\_\_ (study) more and improve my grades.

A

to study

B

will study

C

studying

D

to be studying



Demonstrate correct use of articles and prepositions Demonstrate correct use of subject-verb agreement Demonstrate correct use of writing conventions of spelling, capitalization and punctuation to clarify meaning

Q 196

Choose the correct sentence.

A

Apples, which are my favourite fruit grow in my parent's orchard.

B

Apples which are my favourite fruit grow in my parents' orchard.

C

Apples which are my favourite fruit, grow in my parents' orchard.

D

Apples, which are my favourite fruit, grow in my parents' orchard.

Demonstrate correct use of articles and prepositions Demonstrate correct use of subject-verb agreement Demonstrate correct use of writing conventions of spelling, capitalization and punctuation to clarify meaning

Q 197

Choose the correct sentence.

A

Drinks on the menu included the following, hot chocolate, iced tea and lemonade.

B

Drinks on the menu included the following hot chocolate, iced tea, and lemonade.

C

Drinks on the menu included the following: hot chocolate, iced tea and lemonade.

D

Drinks on the menu included the following. Hot chocolate, iced tea and lemonade

## Demonstrate control of tenses and sentence structure

Q 198

Choose the tense: " He bought a new house last month".

A

Present

B

Past

C

Future

D

None

## Comprehend key vocabulary

Q 199

It was a good piece of land. They got quite ..... by using it to cultivate the much-needed industrial plants.

A

tranquil

B

peaceful

C

responsible

D

prosperous

Demonstrate correct use of articles and prepositions

Q 200

I lived on \_\_\_\_\_ Main Street when I first came to town.

A

a

B

an

C

the

D

no article



## Dependent Causes/ Independent Causes/

Q 201

Statement: Majority of the students in the college expressed their opinion against the college authority's decision to break away from the university and become autonomous. The university authorities have expressed their inability to provide grants to its constituent colleges.

A

Statement I is the cause and statement II is its effect.

B

Statement II is the cause and statement I is its effect

C

Both the statements I and II are independent causes

D

Both the statements I and II are effects of some common cause

Complete the series

Q 202

What is the common vowel in Apple and Banana?

A

E

B

P

C

A

D

M

## Dependent Causes/ Independent Causes/

Q 203

I. PTI was not satisfied with the election results of Sindh assembly by elections when it did not get a single seat. II. PTI has replaced the chief minister of Sindh.

A

Statement I is the cause and statement II is its effect.

B

Statement II is the cause and statement I is its effect.

C

Both statements I and II are independent causes

D

Both statements I and II are the effects of independent cause.



## Series completion (Numbers/Letters)

Q 204

Fill in the blanks. G4X, J8V, M12T, \_\_, S20.

A

N64S

B

P16R

C

Q16R

D

P8S

## Statements and Actions

Q 205

Statement The availability of imported fruits has increased in the indigenous market and so the demand for indigenous fruits has been decreased. I. To help the indigenous producers of fruits, the Government should impose high import duty on these fruits, even if these are not of good quality. II. The fruit vendors should stop selling imported fruits. So that the demand for indigenous fruits would be increased.

A

both of them follows

B

None of them follows

C

Only I follows

D

Only II follows

## Analogies

Q 206

Choose a word that is a necessary part of education system:

A

Meetings

B

Sports

C

Students

D

Tests

## Verbal Classification

Q 207

The set of all real numbers under the usual multiplication operation is not a group since

A

zero has no inverse

B

identity element does not exist

C

multiplication is not associative

D

Both A and B

## Making Judgements

Q 208

A competition always has

A

Reward

B

Rivals

C

Spectators

D

Referee

## Statement and Argument

Q 209

Here are some words translated from an artificial language. granamelke means big tree pinimelke means little tree melkehoon means tree house Which word could mean big house?

A

granahoon

B

pinishur

C

pinihoon

D

melkegrana

## Dependent Causes/ Independent Causes/

Q 210

Statement: Rural and semi urban areas in the country have been suffering due to load shedding for quite some time. If the government is not able to overcome the power crisis, load shedding will be extended even to the urban areas.

A

Statement I is the cause and statement II is its effect.

B

Statement II is the cause and statement I is its effect

C

Both the statements I and II are independent causes

D

Both the statements I and II are effects of some common cause



Q1

In stationary waves

A

Strain is maximum at antinodes

B

Strain is minimum at nodes

C

Strain is maximum at node

D

Amplitude is same at all points



Q2

Which is not radioactive?

A

ozone

B

hydrogen

C

sodium

D

all of these

Q3

The radiation hazards are due to

A

radioactive elements

B

non radioactive elements

C

any of a or b

D

there are no radiation hazards

Q4

Coherent sources are...

A

monochromatic sources

B

sources which produce waves of equal amplitude

C

monochromatic sources which produce waves of constant phase difference

D

sources which produce wave of same frequency

Q5

The SI unit of angular displacement is

A

Metre

B

Kilometre

C

Radian

D

None of these

Q6

The value of acceleration due to gravity on moon is \_\_\_\_\_ of earth

A

1/4 th

B

1/10th

C

2/3rd

D

1/6th

Q7

If peak Voltage across a full wave rectifier is 20V then  $V_{rms}$  is

A

7.07

B

14.14 v

C

16.8V

D

12V

Q8

In series circuit, current remains?

A

Same

B

Different

C

Sometimes same sometimes different

D

None of them

Q9

In Thermodynamics first law is related with

A

Pressure conservation

B

Entropy conservation

C

Temperature conservation

D

Energy Conservation



Q10

Which group consists of only electromagnetic waves:

A

microwaves, radio waves, infra red

B

microwaves, radio waves, sound

C

microwaves, water waves, infra red

D

n/a

Q12

Two  $\alpha$ -particles have the ratio of their velocities as 3 : 2 on entering the field. If they move in different circular paths, then the ratio of the radii of their paths is

A

2 : 3

B

3 : 2

C

4 : 9

D

9 : 4

Q11

Work is a

A

vector quantity

B

scalar quantity

C

sometime scalar some time vector

D

none of these

Q13

A circuit that adds positive or negative dc voltage to an input sine wave is called

A

Clamper

B

clipper

C

diode clamp

D

limiter

Q14

The radioactive isotope of Carbon is

A

$^{12}\text{C}$

B

$^{14}\text{C}$

C

$^{10}\text{C}$

D

none of these

Q15

One radian means

A

arc length of unit radius is half

B

arc length of unit radius is unity

C

one degree

D

all of these

Q16

Galvanometer is an

A

Electromechanical device

B

Electrosolar device

C

Electrothermal device

D

None of them

Q17

For a reversible process, necessary condition is

A

Heat energy should be zero

B

Process must be fast

C

Process must be quasistatic

D

Process must not be in equilibrium



Q18

Primary and secondary powers of a transformer are 200W and 100 W respectively, the efficiency of a transformer is

A

50%

B

1

C

20%

D

10%

Q19

The condition for the validity under Ohm's law is that

A

Resistance must be uniform

B

Current should be proportional to the size of the resistance

C

Resistance must be wire wound type

D

Temperature at positive end should be more than the temperature at negative end

Q20

If the increase in the kinetic energy of a body is 22% , then the increase in the momentum will be:

A

0.22

B

0.44

C

0.1

D

1

Q21 Peak voltage in the output of full wave rectifier is 10V so dc component of output voltage is

A  $10\sqrt{2}$

B  $20/\sqrt{2}$

C  $20/\pi$

D  $20\pi$

Q22

Acceleration of a particle at any moment from a-t graph we calculate is called \_\_\_\_\_ acceleration

A

average

B

instantaneous

C

periodic

D

linear

Q23

Whenever a transverse wave, travelling in a rarer medium, encounters a denser medium. It...

A bounces back such that the direction of its displacement remains same

B bounces back such that the direction of its displacement is reversed

C Travels into second medium and the direction of its displacement is reversed

D Travels into second medium and the direction of its displacement remains same

Q24

An object is undergoing simple harmonic motion. Its time period is  $T$  and total energy is  $E$ . The amplitude of vibration is reduced to half. What is the new time period and total energy of the system?

A

time period =  $T/2$  total energy =  $E/4$

B

time period =  $T$  total energy =  $E/4$

C

time period =  $T/2$  total energy =  $E/2$

D

time period =  $T$  total energy =  $E/2$

Q25

Planck's constant is analogous to :

A

Inertia

B

Wave nature

C

Angular momentum

D

Linear momentum



Q26

If  $dU$  and  $dW$  represent internal energy and work done then which is true?

A

$dU = -dW$  in a adiabatic process

B

$dU = dW$  in Isothermal process

C

$dU = dW$  in adiabatic process

D

$dU = -dW$  in isothermal process

Q27

In case of harmonic oscillator total energy remains

A

variable

B

infinity

C

constant

D

zero

Q28

Michelson determined velocity of light by

A

studying rotation of moon and sun

B

using interferometer

C

using a rotating plane mirror

D

using an octagonal rotating mirror

Q29

Force experienced by charge particles in magnetic field is

A

perpendicular to velocity

B

perpendicular to field

C

parallel to field

D

perpendicular to velocity and field

Q30

An ideal step down transformer is connected to main supply of 240V. it is desired to operate 12V,30W lamp. What is the current in primary coil?

A

0.125A

B

0.5A

C

125A

D

12.5A

Q31

The fusion reaction is almost \_\_\_\_ times more stronger than fission reaction

A

two times

B

ten times

C

hundred times

D

thousand times

Q32

The force between two charges  $Q$  and  $q$ , separated by a distance  $d$  is  $F$ . What will be the force between them when distance between them is  $d/2$ ?

A

$4F$

B

$2F$

C

$F$

D

$F \text{ ----- } 2$

Q33

Transformer is used in rectification to \_\_\_\_\_ the supply voltage

A

step up

B

step down

C

equalize

D

none of them



Q34

The angular acceleration becomes infinite when  $r$  becomes

A

zero

B

doubled

C

very large

D

none of these

Q35

Energy stored in a parallel plate capacitor:...

A

$CV$

B

$CV^2$

C

$\frac{1}{2} CV$

D

$\frac{1}{2} CV^2$

Q36

In step down transformer \_\_\_\_\_ is decreased in secondary coils

A

electric field

B

magnetic field

C

number of turns

D

none of these

Q37

Which of the following waves cannot be polarized.

A

radio waves

B

ultrasound

C

ultraviolet

D

x-rays

Q38

The speed of photons in vacuum is \_\_\_\_ than in liquid water

A

higher

B

smaller

C

equal

D

none of these

Q39

Find the maximum force of the conductor having length 60cm, current 2.75A and flux density of 9 units.

A

14.85

B

18.45

C

84.25

D

7.325

Q40

The final image produced by electron microscope can be seen

A

on electron micrograph

B

scanning micrometer

C

on fluorescent screen

D

none of these

Q41

An ideal gas at 15.5°C and a pressure of  $1.72 \times 10^5$  Pa occupies a volume of  $2.81 \text{ m}^3$ . If the volume is raised to  $4.16 \text{ m}^3$  and the temperature raised to 28.2°C, what will be the pressure of the gas?

A

$121 \times 10^5$  Pa

B

$1.21 \times 10^5$  Pa

C

1.21 Pa

D

121 Pa



Q42

The angular speed of a particle, moving in a circle of radius 20 cm, increases from 2 rad/s to 40 rad/s in 9s the ratio of its centripetal acceleration to tangential acceleration at the end of 19 s is,

A

400:1

B

14:20

C

800:1

D

7:40

Q43

A beam of ion with velocity  $2 \times 10^5$  m/s enters normally into a magnetic field of 0.04 T. The specific charge of ion is  $5 \times 10^7$  C/kg. Radius of circle is

A

0.1 m

B

0.16 m

C

0.2 m

D

0.25 m

Q44

If two particles collide with one anti particle the resultant will give

A

one particle, one anti particle

B

total annihilation

C

one antiparticle only

D

none of these

Q45

x-rays cannot detect

A

sugar

B

blood pressure

C

cholesterol

D

all of these

Q46

Voltage in secondary winding is \_\_\_\_\_ to current in secondary coil

A

directly proportional

B

inversely proportional

C

directly squared proportional

D

not enough information

Q47

Let L be the light source. Its intensity at the distance of  $3x$  from L is  $I$ . What is its intensity of light at the distance of  $2x$  from the source of light?

A

$9I/4$

B

$3I/2$

C

$4I/9$

D

$2I/3$

Q48

Efficiency of heat engine in Terms of Temperature of reservoir and sink is defined as

A

$$T_1/T_2$$

B

$$1+T_1/T_2$$

C

$$1-T_1/T_2$$

D

$$T_2/T_1$$

Q49

A capacitor can store its energy in its:....

A

magnetic field

B

parallel plate

C

electric field

D

coil



Q50

What is the common vowel in Apple and Banana?

A

E

B

P

C

A

D

M

Q51

If two species have similar proteins and genes it means

A

they have same organs

B

they have common ancestors

C

they have similar appearance

D

all of above

Q52

juxtaposition

A

contrast

B

wit

C

image

D

freedom

Q53

If a squash ball comes back to its starting point after bouncing off the wall several times, then:....

A its total displacement is zero but its average velocity is non-zero

B its total displacement is non-zero but its average velocity is zero

C both its total displacement and its average velocity is non-zero

D its total displacement is zero and so also is its average velocity

Q54

Amorphous solids turns into glass like state from rubber like state, this is called

A

transition

B

crack transition

C

glass transition

D

all of these

Q55

Which of the following is not a derivative of carboxylic acid?

A

Alkyl Halide

B

Acetamide

C

Ester

D

Anhydride

Q56

Which of the following compound is formed when  $\text{NaCl}$  reacts with  $\text{CH}_3\text{MgBr}$

A

$\text{CH}_3\text{CN}$

B

$\text{CH}_3\text{Cl}$

C

$\text{CH}_3\text{CH}_2\text{NH}_2$

D

None of these

Q57

Which of the following is an ovoviviparous organism?

A

reptiles

B

mammals

C

frog

D

Duckbill platypus



Q58

Flame cells are the excretory structures for which of the following?

A

Annelida

B

Coelenterates

C

Echinodermata

D

Platyhelminthes

Q59

Is there anything \_\_\_\_\_ you'd like to ask me about?

A

else

B

more

C

extra

D

much

Q60

Projectile motion is not dependent on the \_\_\_\_\_ of particle

A

initial velocity

B

mass

C

launch angle

D

acceleration

Q61

Whenever new nuclei are formed energy is

A

absorbed

B

released

C

remain unchanged

D

none of these

Q62

Scattering is a process involving \_\_\_\_\_

A

reflection

B

refraction

C

diffraction

D

none of these

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Q64

In IUPAC nomenclature, aldehydes are named as \_\_\_\_\_?

A

Alkanol

B

Alkanal

C

Alkanone

D

Alkaldehyde

Q65 an element or its compound is first \_\_\_\_\_ to get its \_\_\_\_\_ spectrum by spectrometer

A freeze, continuous

B freeze, line

C volatilized, line

D volatilized, continuous

Q66

The reaction in which one of the group of a compound is replaced by another group of atoms is called as\_\_\_\_\_?

A

Substitution

B

Elimination

C

Addition

D

Condensation



Q67

A mole of a substance contains \_\_\_\_\_ particles

A

$6.2 \times 10^{22}$

B

$6.22 \times 10^{22}$

C

$6.02 \times 10^{23}$

D

$6.5 \times 10^{22}$

Q68

Only those substances are written in Ion Electron Method

A

which are oxidizing

B

which are reducing

C

which are not taking part in reaction

D

Which will take part in reaction

Q69

The temperature at which enzyme activity is maximum is called as\_\_\_\_\_?

A

Maximum temperature

B

Absolute temperature

C

Critical temperature

D

Optimum temperature

Q71

What is the coordination number of Cu metal in  $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4$ ?

A

3

B

4

C

6

D

1

Q72

H-bonding is stronger than \_\_\_\_\_?

A

Dipole dipole forces

B

Debye forces

C

London forces

D

All of these

Q73

What is the hybridization of carbon in -COOH group?

A

$sp^2$

B

$Sp^3$

C

$Sp$

D

None of these

Q74

Isopentane is an example of \_\_\_\_\_?

A

Aromatic compounds

B

Branched chain compound

C

Alicyclic compounds

D

None of these

Q75

Addition of second Electron to a uni-negative ion always\_\_\_\_\_?

A

An endothermic process

B

An exothermic process

C

Neutral process

D

Energy wasted



Q76

Optimum temperature range for the process of fermentation is

A

2 - 3 °C

B

25 - 35 °C

C

27 - 33 °C

D

4 - 45 °C

Q77

Cholesteryl Benzoate turns milky at

A

123°C

B

135°C

C

145°C

D

179°C

Q78 What will be the product at cathode during the electrolysis of brine in Nelson's cell?

A  $\text{H}_2$

B Na

C  $\text{CO}_2$

D  $\text{O}_2$

Q79

Which of the following is used in silvering of mirror in industries \_\_\_\_\_?

A

Acetone

B

Propanol

C

Ethanal

D

Butanone

Q80

The bond formed by the complete transfer of electron is called

A

ionic bond

B

covalent bond

C

metallic bond

D

polar covalent bond

Q81

Sodium is not observed in +2 oxidation state because of its

A

high first ionization potential

B

high second ionization potential

C

high ionic radius

D

high electronegativity

Q82

Which of the following is a non-typical transition element?

A

Mn

B

Zn

C

Cu

D

Ag

Q83

Alkyl iodides can not be prepared directly by the halogenation of alkanes because ?

A

Iodine reacts slowly

B

Iodine reacts reversibly

C

HI formed reduces alkyl iodide again to starting material

D

All of these



Q84

Electrons in a Voltaic Cell flow from

A

Cathode to Anode

B

Anode to Cathode

C

Right to left

D

None of these

Q85

At  $0^{\circ}\text{C}$  what is the physical state of water?

A

Ice

B

liquid

C

Vapour

D

Both ice and liquid

Q86

The nature of Binding Force in Ionic Crystals is

A

Magnetic

B

Repulsive

C

Electrostatic

D

Weak

Q87

Anything under test or observation in laboratory is called

A

Surrounding

B

System

C

Confined space

D

None of these

Q88

By Increasing temperature in Ammonia synthesis the value of  $K_c$

A

decreases

B

increases

C

remain constant

D

None of these

Q89

Dipole dipole forces are stronger between the molecule when?

A

Electronegativity difference is higher

B

Electronegativity difference is less

C

Molecules are far from each other

D

Electronegativity difference is zero

Q90

As far as nuclear charge increases, the decrease in ionic radii will also

A

larger

B

smaller

C

remains same

D

moderate

Q91

Which of the following is best method to prepare alkyl halides from alcohols?

A

Reaction of alcohol with HX

B

Reaction of alcohol with  $\text{SOCl}_2$

C

Reaction of Alcohol with  $\text{PCl}_3$

D

Reaction of Alcohol with  $\text{PCl}_5$



Q92

Which is not a heterocyclic compound?

A

Furan

B

Pyrrole

C

Pyridine

D

Ethane

Q93

The isomerism in which compounds have different number of carbon atoms on both sides of the functional group is called as?

A

Tautomerism

B

Metamerism

C

Geometrical Isomerism

D

Position isomerism

Q94 If temperature of reaction medium increases above optimum temperature then\_\_\_\_\_?

A It increases the enzyme activity

B Stops the reaction

C Decreases the enzyme activity

D Both b and c

Q95

Acetaldehyde oxidation will lead to formation of

A

Acetic acid

B

Butanoic acid

C

Propanoic acid

D

Ester

Q96

The shapes of subshells is \_if value of azimuthal quantum number 'l' is 2

A

spherical

B

dumbbell

C

complicated

D

all of these

Q97

Which of the following oxidizing agents can oxidize benzene?

A

$\text{KMnO}_4$

B

$\text{K}_2\text{Cr}_2\text{O}_7$

C

$\text{KHMnO}_4$

D

$\text{V}_2\text{O}_5$

Q98

Who introduce the concept of macromolecules?

A

Runge

B

MaxWell

C

Staudinger

D

None of these

Q99

How many isomers of a disubstituted benzene are possible?

A

Two

B

Three

C

Four

D

One



Q100

A structural formula shows\_\_\_\_\_?

A

Arrangement of atoms in the compound

B

Arrangement of electrons in the compound

C

Arrangement of Orbitals that involved in bonding

D

Lewis structure of compounds

Q101

In industries, methanol is prepared from?

A

Marsh gas

B

Carbon dioxide and water

C

Water gas

D

Methane +  $H_2$

Q102

Which one of the following shows that iodoform test for a compound is positive?

A

Formation of carboxylate salt

B

Brick red precipitate formation

C

Yellow crystals

D

Formation of water

Q103

\_\_\_\_\_ enzyme catalyses the conversion of hexoses to 6- phosphate derivatives.

A

Hexokinase

B

Glucokinase

C

Fructokinase

D

Malonic acid

Q104

Which of the following reactions have first step similar with each other?

A

$E_1, S_2$

B

$E_2, S_1$

C

$E_2, S_2$

D

$E_1, S_1$

Q105

Location of transition elements is in between?

A

s and p block

B

d and f block

C

s and f block

D

None

Q106

A sample so .7 mol of metal **M** reacts completely with excess of fluorine to form 45 g of  $\text{MF}_2$  ,how many moles of F are present in it.

A

1.4 moles

B

2.4 moles

C

2 moles

D

1.2 moles

Q107

line spectrum of sodium contains \_\_\_\_ colored lines separated by a definite distance

A

one yellow

B

two yellow

C

two brown

D

two golden



Q108

Values of Van der Waal's constant 'b' in correct order is

A

$\text{CO}_2 < \text{SO}_2 < \text{O}_2 < \text{H}_2$

B

$\text{CO}_2 > \text{SO}_2 > \text{O}_2 > \text{H}_2$

C

$\text{O}_2 < \text{H}_2 < \text{CO}_2 < \text{SO}_2$

D

$\text{O}_2 > \text{H}_2 > \text{CO}_2 > \text{SO}_2$

Q109

Which one of the product is obtained when acetic acid reacts with Ethyl alcohol in the presence of mineral acid ?

A

CO

B

$\text{CH}_3\text{COOCH}_3$

C

$\text{CH}_3\text{CH}_2\text{COOH}$

D

$\text{CH}_3\text{COOCH}_2\text{CH}_3$

Q110 Number of Electrons added on both sides of oxidation and reduction half reactions are balanced

A At the start of procedure

B Somewhere in the middle of balancing

C After Adding two Half reactions

D Before Adding two Half Reactions

Q111

The existence of an element in more than one crystalline forms called

A

isomerism

B

allotropy

C

anisotropy

D

all of these

Q112

Which is an aromatic Aldehyde?

A

Propanone

B

Pentanol

C

Benzaldehyde

D

Hexanol

Q113

Reflex action is controlled by:

A

Peripheral nervous system

B

Central nervous system

C

autonomic nervous system

D

Circulatory system

Q114

The organisms able to use sunlight directly as a source of energy are?

A

Plants

B

Animals

C

Fungi

D

Omnivores

Q115

The Prokaryotic Life is characterized by

A

absence of locomotion

B

absence of nuclear envelope

C

absence of Protein

D

absence of nuclear material



Q116

In some cases the blastomere can produce complete embryo the cleavage will be?

A

Spiral and determinate

B

Spiral and indeterminate

C

Radial and determinate

D

Radial and indeterminate

Q117

Allosteric enzymes consist of multiple?

A

inhibitors

B

polypeptide chains

C

active sites

D

temperature ranges

Q118

Population growth is checked by which of the following?

A

no competition

B

no polymorphism

C

polymorphism

D

competition

Q119

Which of the following bacteria are thick rigid and spiral?

A

Coccus

B

Vibrio

C

spirillum

D

Bacillus

Q120

In photosynthesis dark reaction, is called so because

A

It occurs in dark.

B

It does not require light energy.

C

It cannot occur during daytime.

D

It occurs more rapidly at night.

Q121

Which of the following cytoskeletal fiber contain tubulin protein?

A

One which help in assembly of spindles during mitosis.

B

One involved in internal cell motion

C

One involved in maintenance of cell shape.

D

both a and c

Q122

When red homozygous flower is paired with white homozygous flower then the resultant pink snapdragon is result of?

A

complete dominance

B

codominance

C

partial dominance

D

all of these

Q123

What is the main cause of lung cancer?

A

Smoking

B

Cough

C

Pollutants

D

Mutagens



Q124

In what year was the first person vaccinated by Edward Jenner?

A

1876

B

1796

C

1696

D

1850

Q125

The genetic change in a population caused by natural selection is called?

A

polymorphism

B

specialization

C

gene linkage

D

adaptation

Q126

For the production of Lactose we combine

A

glucose, galactose and dehydrogenase them

B

glucose, fructose and dehydrogenase them

C

two amino acids must form a peptide bond

D

nitrogenous base with sugar molecule

Q127

The spinal cord is part of:

A

brain

B

Central nervous system

C

peripheral nervous system

D

somatic division

Q128

What is meant by optimum temperature of an enzyme?

A

The temperature at which the primary structure of an enzyme remains intact.

B

The temperature at which an enzyme makes the maximum amount of product.

C

The temperature at which an enzyme may be more affected by an inhibitor.

D

The temperature at which an enzyme makes the least amount of product.

Q129

Where can viruses replicate?

A

Animals

B

Plants

C

Bacteria

D

All

Q130

The process that has transformed life on earth from its earliest forms to vast diversity is?

A

mutation

B

evolution

C

migration

D

genetic drift

Q131

Cytokinins delay the aging of fresh leaf crops such as cabbage and lettuce as well as keeping flowers?

A

attached

B

open

C

fresh

D

delayed



Q132

The centers for thermoregulation and osmoregulation are present in:

A

thalamus

B

amygdala

C

hypothalamus

D

cerebellum

Q133

An activated enzyme consisting of polypeptide chain and a cofactor is called?

A

Apoenzyme

B

Holoenzyme

C

Activated enzyme

D

both b and c

Q134

The larvae of which of these animals resemble those of chordates?

A

Starfish

B

Cuttlefish

C

Catfish

D

Butterfly

Q135

In the chest wall, the rib muscles are considered as

A

intercostal muscles

B

Pulmonary muscles

C

Both A and B

D

Coastal muscles

Q136 A smallest contractile unit of muscle contraction called sarcomere is the area between two?

A H zone

B M line

C Z line

D Z zone

Q137

Half wave voltage multiplier can provide any degree of voltage multiplication by cascading diodes and capacitors.

A

any doubler

B

any tripler

C

any multiplication

D

none of them

Q138

Muscles are composed of:

A

silica

B

polyester threads

C

groups of cell fibers

D

calcium and phosphorous

Q139

The genetically Engineered vaccine is not available for which of the following?

A

HAV

B

HBV

C

HCV

D

HDV



Q140

Which one of the following is not a double membranous structure?

A

vacuole

B

mitochondria

C

chloroplast

D

nucleus

Q141

A detachable cofactor is known as:

A

Prosthetic group

B

Coenzyme

C

Holoenzyme

D

Activator

Q142

cytochrome C is oxidised by which coenzyme in the ETC?

A

cytochrome a

B

coenzyme q

C

coenzyme b

D

coenzyme a

Q143

In a certain species of feline, all males are much larger than females. Members of either sex that are of intermediate size struggle to find mates. What principle best describes this phenomenon?

A

Bottleneck affect

B

Directional selection

C

Genetic drift

D

Disruptive selection

Q144

How many pairs of homologous chromosomes are present in *Pisum sativum*?

A

5

B

6

C

7

D

8

Q145

A man with blood group "A" marries a woman of blood group "B". Both are heterozygous. What is the offsprings having phenotype "O"

A

10%

B

25%

C

50%

D

75%

Q146

60S and 40S subunit combine to form what size particle?

A

80S

B

90S

C

100S

D

110S

Q147

Metastasis is a process where:

A

One cell control activities of others

B

one cell transfers its activities to others

C

one cell destroys other cells

D

one cell transfers germs to another cell



Q148

The amount of oxygen in exhaled air is:

A

21%

B

16%

C

79%

D

4%

Q149

What is the origin of the acoelomate gut?

A

Ectodermal

B

Mesodermal

C

Endodermal

D

none of these

Q150

Example of bacteria requiring low concentration of oxygen is?

A

spirochete

B

e coli

C

pseudomonas

D

campylobacter

Q151

Which of the following processes had resulted in the production of different breeds of domestic dogs and pigeons?

A

natural selection

B

cross breeding

C

artificial selection

D

self breeding

Q152

The fundamental contractile unit of the myofibril:

A

Z-line

B

actin

C

Sarcomere

D

sarcolemma

Q153

How many amino acids are constituents of proteins only?

A

25

B

20

C

21

D

22

Q154

When the glucose level in blood comes down, glucose is synthesized from\_\_\_\_

A

fats

B

glycogen

C

amino acids

D

DNA

Q155

Critical day length for cocklebur is which of the following?

A

8.5 hrs

B

10hrs

C

14 hrs

D

15.5 hrs

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Q156

What are the distinguishing features of fibrous proteins?

A non-crystalline

B elastic

C disorganized

D both a and b

Q157

What does the active site of the enzyme determine?

A

Looks like a lump projection from the surface of an enzyme

B

Forms no chemical bond with substrate

C

never changes

D

Determines by its structure the specificity of an enzyme

Q158

The female gametes are most commonly referred as?

A

egg

B

ova

C

ovum

D

all of these

Q159

Saponification number describes\_\_\_\_

A

Unsaturation in fat

B

Average molecular weight of fatty acid

C

Acetyl number

D

Acid number

Q160

Which of the following is not true of virions?

A

Reproduce independently

B

contain DNA

C

Contain RNA

D

Extracellular

Q161

Secondary cell wall is absent in \_\_\_\_\_.

A

Xylem

B

Phloem

C

Meristems

D

All of them possess secondary cell walls.

Q162

The right side of the body is controlled by:

A

left cerebral hemisphere

B

right cerebral hemisphere

C

Hippocampus

D

Corpus callosum

Q163

Which of the following changes could lead to loss of enzymatic function?

A

Decrease in activation energy of the reaction

B

Increase in enzyme concentration

C

Change in overall enthalpy of the reaction

D

Increase in pH of the reaction



Q164

Which of the following glands contribute to the production of semen?

A

Seminal vesicles

B

Bulbourethral glands

C

Prostate gland

D

all of these

Q165

Which of the following best describes the impact of purifying selection?

A

It increases frequency of an allele

B

It is the same as disruptive selection

C

It increases genetic diversity

D

It removes variation from the population

Q166

Van Niel hypothesis about the production of oxygen during photosynthesis was based on the study and investigations on?

A

Bacteria

B

Algae

C

Protonema

D

Cyanobacteria

Q167

What happens in a contracted muscle fibre?

A

A band vanishes

B

M line vanishes

C

H zone elongates

D

I band is steady

Q168

The process of self-digestion of selective non functional organelle by cells through the actions of enzymes originating from the cell is called?

A

pinocytosis

B

endocytosis

C

autophagy

D

cytotoxicity

Q169

A sample of RNA is sequenced and found to contain 22% adenine. Which of the following conclusions can also be drawn about the sample?

A

22% uracil

B

22% cytosine

C

22% thymine

D

22% guanine

Q170

Normal human blood is about:

A

15 ml/100 ml of blood

B

19.6 ml/100 ml of blood

C

20 ml/ 100 ml of blood

D

200 ml/100 ml of blood

Q171

An inhibitor is added, disrupting the function of a particular enzyme. The experimenter adds more substrate, and enzyme function increases again. These results indicate the involvement of what type of inhibitor?

A

Noncompetitive

B

Uncompetitive

C

Allosteric

D

Competitive



Q172

Which of these functions will be affected if the medulla oblongata is damaged?

A

Thermoregulation

B

Vision

C

Memory

D

Tactile sensation-response when pricked with a needle

Q173

\_\_\_\_\_ butter is melting

A

A

B

An

C

The

D

no article

Q174

According to the information on this page, items bought before 1940 \_\_\_\_\_ more than items made after that year.

A

costs

B

costed

C

costing

D

cost

Q175

The Earth \_\_\_\_\_ (move) around the sun.

A

move

B

moving

C

moves

D

had moved

Q176

The teacher \_\_\_\_\_ them an hour for their painting.

A

allowed

B

has allowed

C

is allowing

D

allows

Q177

The rain \_\_\_\_\_ (continue) into the evening, ruining the picnic plans.

A

continues

B

will continue

C

continued

D

contnuing

Q178

As a teacher, my primary concern is the \_\_\_\_\_ of my students.

A

welfare

B

welcome

C

well off

D

well wisher

Q179

Identify the tense used in the given sentence. "Everyone shall be reaching by tomorrow."

A

Present

B

Past

C

Future

D

None



Q180

Choose the correct sentence.

A

I like to cook I like to make cake, bread and pie.

B

I like to cook. I like to make cake, bread and pie!

C

I like to cook; I like to make cake, bread and pie.

D

I like to cook. I like to make cake, bread and pie.

Q181 If you lend him a book (A)/ he will lend it (B), to someone else (C) and never you will get it back. (D)

A If you lend him a book

B he will lend it

C to someone else

D and never you will get it back.

Q182

Do you have \_\_\_\_\_ calculator? I need it to solve this sum.

A

a

B

an

C

the

D

no article

Q183

A container of nuts and bolts \_\_\_\_\_ found in the cellar.

A

was

B

were

C

would be

D

is

Q184

They had been waiting at the departure lounge for almost three hours when they finally got --- the train.

A

on

B

in

C

up

D

to

Q185

I have decided \_\_\_\_\_ (study) more and improve my grades.

A

to study

B

will study

C

studying

D

to be studying

Q186

Choose the correct sentence.

A Apples, which are my favourite fruit grow in my parent's orchard.

B Apples which are my favourite fruit grow in my parents' orchard.

C Apples which are my favourite fruit, grow in my parents' orchard.

D Apples, which are my favourite fruit, grow in my parents' orchard.

Q187

Choose the correct sentence.

A

Drinks on the menu included the following, hot chocolate, iced tea and lemonade.

B

Drinks on the menu included the following hot chocolate, iced tea, and lemonade.

C

Drinks on the menu included the following: hot chocolate, iced tea and lemonade.

D

Drinks on the menu included the following. Hot chocolate, iced tea and lemonade



Q188

Choose the tense:" He bought a new house last month".

A

Present

B

Past

C

Future

D

None

Q189

It was a good piece of land. They got quite ..... by using it to cultivate the much-needed industrial plants.

A

tranquil

B

peaceful

C

responsible

D

prosperous

Q190

I lived on \_\_\_\_\_ Main Street when I first came to town.

A

a

B

an

C

the

D

no article

Q191

Statement: Majority of the students in the college expressed their opinion against the college authority's decision to break away from the university and become autonomous. The university authorities have expressed their inability to provide grants to its constituent colleges.

A

Statement I is the cause and statement II is its effect.

B

Statement II is the cause and statement I is its effect

C

Both the statements I and II are independent causes

D

Both the statements I and II are effects of some common cause

Q192

I. PTI was not satisfied with the election results of Sindh assembly by elections when it did not get a single seat. II. PTI has replaced the chief minister of Sindh.

A

Statement I is the cause and statement II is its effect.

B

Statement II is the cause and statement I is its effect.

C

Both statements I and II are independent causes

D

Both statements I and II are the effects of independent cause.

Q193

Fill in the blanks. G4X, J8V, M12T, \_\_, S20.

A

N64S

B

P16R

C

Q16R

D

P8S

Q194

Statement The availability of imported fruits has increased in the indigenous market and so the demand for indigenous fruits has been decreased. I. To help the indigenous producers of fruits, the Government should impose high import duty on these fruits, even if these are not of good quality. II. The fruit vendors should stop selling imported fruits. So that the demand for indigenous fruits would be increased.

A

both of them follows

B

None of them follows

C

Only I follows

D

Only II follows

Q195

Choose a word that is a necessary part of education system:

A

Meetings

B

Sports

C

Students

D

Tests

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Q196

The set of all real numbers under the usual multiplication operation is not a group since

A

zero has no inverse

B

identity element does not exist

C

multiplication is not associative

D

Both A and B

Q197

A competition always has

A

Reward

B

Rivals

C

Spectators

D

Referee

Q198

Here are some words translated from an artificial language. granamelke means big tree pinimelke means little tree melkehoon means tree house Which word could mean big house?

A

granahoon

B

pinishur

C

pinihoon

D

melkegrana

Q199

Value of current in a short circuit is \_\_\_\_\_

A

Infinite

B

zero

C

minimum

D

maximum

Q200

Animals like starfish have small groups of neurons in each arm connected to a ring of neurons in the centre. This type of nervous system is called \_\_\_\_\_.

A

Centralized nervous system

B

Partially centralized nervous system

C

Diffuse nervous system

D

Partially diffuse nervous system

Q201

A state function depends upon the \_\_\_\_\_?

A

Initial condition of the system

B

Final condition of the system

C

Path of the system

D

Both initial and final condition of the system

Q202

What is hydrolyzed during muscle contraction?

A

ACP

B

ADP

C

NAD

D

ATP

Q203

The rise in blood glucose concentration occurs due to which hormone?

A

glucagon

B

glucose

C

insulin

D

all of these



Q204

In which of the following reaction steps free radical is formed?

A

Initiation, termination

B

Termination, propagation

C

Only initiation

D

Initiation, propagation

Q205

$\text{NaBH}_4$  causes reduction of aldehyde and ketones into \_\_\_\_\_?

A

Alcohols

B

Alkenes

C

Phenols

D

Alkanes

Q206

Which one of the following is not a heterocyclic compound

A

thiophene

B

anthracene

C

furan

D

pyrrole

Q207

The function of vocal cords is to help in:

A

voice production

B

energy production

C

glucose production

D

air production

Q208

The fluid mosaic model of plasma membrane proposes that membranes are:

A

Solid

B

Semi-solid

C

Fluid

D

Liquid

Q209

The type of bronchitis that causes no permanent damage to the lungs and lasts for two weeks is known as

A

Acute bronchitis

B

Chronic bronchitis

C

coastal bronchitis

D

intercostal bronchitis